Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz (Inquiry Terminated as to 3.3-4.2 GHz)	)	GN Docket No. 17-183
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band)	)	RM-11791
	)	
Fixed Wireless Communications Coalition, Inc. Request for Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11778

REPLY COMMENTS OF PSSI GLOBAL

PSSI GLOBAL SERVICES, L.L.C. ("PSSI Global") hereby submits its Reply Comments in this proceeding to review use of the 3.7-4.2 GHz frequency band (the "C-band")[1].

1. As is evident from the record of the comments submitted in response to the Notice of Proposed Rulemaking ("NPRM")[2], PSSI Global is hardly alone in voicing concern about the potential disruption of vital communications services provided via the C-band from some of the proposals in the NPRM. Indeed, if even a minimal amount of C-band spectrum is repurposed and/or there are substantial changes in the current full-band/full-arc licensing rules for the C-band, this can negatively impact feeds for broadcasting of programming in the U.S.

2. The comments submitted by various parties reinforce the conclusion that at best the NPRM's

[1] These Reply Comments are timely filed. See *Order in GN Docket No. 18-122*, DA 18-1190, released Nov. 21, 2018 (Chief, Wireless Telecom. Bur.), which established December 11, 2018, as the new deadline for filing of any reply comments.

[2] *In re Expanding Flexible Use of the 3.7 to 4.2 GHz Band in GN Docket No. 18-122 (Order and Notice of Proposed Rulemaking)*, 33 FCC Rcd ____, FCC 18-91, released July 13, 2018 (the "NPRM").

proposals might be too ambitious and should be scaled back. There are no presently available alternatives to maintain the high quality of programming aggregation and distribution currently provided by the C-band operators. Further, despite the persistent assertions by mobile operators that they desperately need ever more spectrum, there are questions whether there is indeed such a need for spectrum, given the amount of spectrum that is unused or under-utilized, and more particularly why it should come at the expense of the huge amount of media content distributed on the C-band frequencies. If the Commission determines to permit terrestrial mobile or other services in the C-band, it must guarantee proper compensation of existing users like PSSI Global. All this underscores PSSI Global's primary contention that the Commission should retain the status quo on the C-band.

Additional Spectrum for Terrestrial Mobile Services Should Not Be Provided at the Expense of High Quality of U.S. Programming

A. American Consumers Depend on the Continued, Robust Full Band/Full Arc Licensing Policies for the C-band.

3. In its Initial Comments, PSSI Global set out how dependent it is as the predominant transportable user in the United States on the continuation of full band/full arc licensing in the C-band[3]. It included case studies of specific clients with whom it works, including ESPN, the Golf Channel and NASCAR to demonstrate how vital it is to maintain the flexibility provided by full band/full arc licensing[4]. PSSI Global also rebutted the assertion of some parties that fiber or the Ku-band offer an alternative to the continued robust characteristics of the C-band for the downlink of satellite-delivered programming[5].

[3] Comments, pp. 2-5.

[4] Comments, pp. 6-9; Exhibits 1, 2 and 5.

[5] Comments, pp. 6, n. 4; 7, n. 5; 8; 9; 16.

4. In reviewing the comments of other parties in this proceeding, it is evident that PSSI Global is not alone in noting the potential harm that could befall media programmers from substantial changes in the current regulatory regime for the C-band. Comcast has noted that: "The entire video distribution ecosystem has developed relying heavily on the C-Band, thanks to the band's uniquely favorable physical properties, Commission rulemakings, and substantial investment and innovation by the video and satellite industries.[6]" As the National Association of Broadcasters (NAB) has noted, "In the wireless industry's "Race to 5G" it is critical for the Commission to not sacrifice the nation's position as the world leader in content[7]."

5. American consumers – the public whose interests are to be served by the Commission – depend greatly on the C-band as presently regulated for receipt of programming that they wish to view or hear. National Public Radio (NPR) reports that its listeners are completely dependent the Public Radio Satellite Service, which transmits on extremely low-power satellite-to-earth station C-band downlinks that are particularly susceptible to interference[8]. Comcast utilizes hundreds of C-Band receive-only earth stations throughout the country and receives over 80 percent of primary signals of its cable channels via C-Band satellites[9]. The dependence of the viewing and listening public is demonstrated by the case of Comcast's NBC Universal unit. NBCUniversal delivers video programming to approximately 2,000 MVPD (multichannel video programming distributor) headends around the country, serving 100 million households, relying extensively on C-Band satellites[10]. As PSSI

[6] Comcast Comments, p. 5.

[7] NAB Comments, p. 2.

[8] NPR Comments, p. 2.

[9] Comcast Comments, p. 3.

[10] *Id.*, at p. 4.

Global also pointed out in its Initial Comments, independent broadcasters have noted that without the current "full band/full arc" licensing policies of the C-band "many Americans would not be able to watch the Super Bowl, the Oscars, the NCAA Tournament, coverage of Presidential debates, or any other network programming.[11]" Thus, as Commissioner Rosenworcel observed in the NPRM, "the Commission 'need[s] to acknowledge that these frequencies are used right now by television and radio broadcasters and cable operators to deliver programming to more than 100 million American households[12]." Many proposals in the NPRM would negatively impact the ability to do so.

6. Alpha Star International, L.L.C. reminds us that such programming needs arise at the last minute. As PSSI Global has previously commented, only the flexibility of the full band/full arc regime in the C-band can accommodate the services that the programming clients need. The ability to provide such programming would be severely impacted by many of the proposals in the NPRM.

7. Thus, as the Commission considers the NPRM, it must keep in mind that in providing more spectrum for terrestrial mobile operators, it should not endanger the continued ability to provide quality programming to the American viewer and listener.

B. There is No Proven Substitute for C-band for the Aggregation and Distribution of Programming

8. Several parties in this proceeding maintain that there are adequate substitutes for C-band. For example, Qualcomm insists that the Commission should consider the extent to which fiber optic cables and Ka- and Ku-band satellite spectrum bands can serve certain C-band uses such as video content delivery; that higher frequency bands, like the Ku- and Ka- spectrum bands, that support higher

[11] Comments of Block Communications, Inc., Gray Television, Inc. and Meredith Corporation, at p. 3.

[12] NPRM, Separate Statement of Commissioner Rosenworcel, at p. 101.

throughput and greater capacity.[13] T-Mobile similarly contends that fiber can replace satellite use in many locations and that long-haul fiber infrastructure in the U.S. is robust and widely available.[14] However, such claims are belied by the real-life experience of parties like PSSI Global. The Commission should not ignore that the commercial programming community cannot rely on either fiber or other bands as a substitute for the C-band.

9. Like PSSI Global, numerous parties have noted the unreliability of the Ku-band as a substitute for C-band. Comcast comments that Ku-band transmissions are prone to rain fade and other forms of atmospheric interference, making that band inadequate as a substitute and the Ka-band is significantly more prone to rain fade than even the Ku-band[15]. Eternal Word Television Network similarly notes that "Ku-band satellite spectrum lacks the reliability of the C-band and is especially susceptible to attenuation and rain fade, making it a particularly poor alternative for EWTN's video programming distribution for which a continuous and reliable signal is critical" and that it sees no reliable substitute for C-band on the horizon.[16] Radio programmers similarly rely on the C-band because of the more robust characteristics of the frequency band. "C-band satellites are uniquely suited for the delivery of programming nationwide because they are 'resistant to rain fade and capable of covering large areas, enabling coast-to-coast coverage with high availability.'"[17]

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[13] Qualcomm Comments, pp. 5-6.

[14] T-Mobile Comments, p. 8.

[15] Comcast Comments, pp. 20-21. Comcast acknowledges that "[f]or historical reasons, NBC uses Ku-band satellites in distributing NBC Network programming to affiliates, ***but it also relies on C-Band satellites on a 24/7 basis, due to its greater reliability, for operationally necessary redundancy to ensure 24/7 reception***." Id. at p. 4, n. 5.

[16] EWTN Comments, p. 3

[17] NAB Comments at p. 4, citing Comments of the Satellite Industry Association at i, GN Docket No. 17-183 (Oct. 2, 2017). See also Comments of Cumulus and Westwood One, pp. 5-11.

10. As PSSI Global has argued, fiber is also not a substitute for C-band. Although is a valued part of a managed reliable, redundant solution, it often fails for a variety of reasons and cannot be relied upon alone. PSSI Global provided examples of programming events where fiber was simply not available. As the NAB has outlined in its comments, "fiber is far from ubiquitous, particularly in rural America", and even where available is not always an economical substitute[18]. The American Cable Association underscores that this problem arises particularly for its members that rely in many cases exclusively on the C-band to deliver programming content to their customers, as they are mostly concentrated in rural America where fiber delivery is not available or was susceptible to failure.[19]

11. Where fiber can be reasonably available, it provides either a primary pathway or a redundant means of delivering programming. However, it is PSSI Global's experience that fiber alone is no adequate substitute for the C-band. First, as a business matter, as PSSI Global noted in its comments, redundancy is often a requirement for programming, particularly live events.[20] Moreover, having alternative technologies available is important, as Comcast points out, from a perspective of redundancy and path diversity for the delivery of programming.[21]

12. For the parties that seek to carve up the C-band, arguing Ku-band and fiber sounds like a solution. The real-life experience of people in the programming community demonstrates that it is not.

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[18] Id., p. 5. *See also* NPR Comments at p. 8.

[19] American Cable Association Comments, p. 3.

[20] PSSI Global Comments, p. 7, n. 6.

[21] Comcast Comments, p. 7.

The Availability of Other Spectrum, Including Spectrum Being Warehoused, Supports Retaining Existing Regulatory Structure in C-band

13. The record in this proceeding, including the filings of numerous parties, have noted the substantial use of the C-band, contrary to the contention of some that use of the band tends to be overstated[22]. PSSI Global itself has noted the intensive use of the C-band for transmission of programming, including the dependence of media networks, programmers and the mobile transportable operators like PSSI Global on the band for coverage of major, live events. Specifically, PSSI Global noted that although users like themselves are described as "occasional use" in the industry (to contrast with full-time programmers), these services involve a substantial use of the C-band and are essential to PSSI operations and our many customers who rely upon "occasional use" on a daily basis.[23]

14. For PSSI Global, this raises again the fundamental question of why make substantial changes in a frequency band so heavily used and with so many different existing users as the C-band. PSSI Global acknowledges the important goal that the Commission has set out, not only in this proceeding, but also in others, of advancing 5G services, which will require more spectrum than mobile operators have previously had to use. However, as Comcast has noted, there should be a distinction between unused and underutilized spectrum. "Where there is intensive utilization, however, the Commission must exercise more caution in crafting creative, careful solutions to enable additional uses, while protecting existing services and American consumers who depend on such services."[24] PSSI Global agrees that is "important to ensure that incumbent operations are not disrupted, affecting hundreds of millions of

[22] T-Mobile Comments, p. 19.

[23] PSSI Global Comments, p. 2.

[24] Comcast Comments, p. 2, citing *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd. 6567 (2014).

American consumers who depend upon current C-Band services for news and entertainment."[25]

15. There is considerable spectrum currently unused in other bands that could accomplish many of the Commission's goals. As other parties have noted, the recent incentive auction made 70 megahertz of spectrum available, and the previous major spectrum auction, the AWS-3 auction, made 65 megahertz available[26]. There are blocks of AWS-4, 700 MHz E Block, and H Block spectrum currently going unused.[27] T-Mobile will inherit substantial unbuilt 2.5 MHz spectrum from Sprint if their merger is approved. If the Commission looks to repurpose spectrum, NAB points out that DISH is sitting on roughly 95 MHz of underutilized low-band and mid-band spectrum, which could provide an alternative to having to engage in the clearing of a similarly sized amount of spectrum in the crowded C-band.[28]

16. As PSSI Global has noted, its preferred position would be to conclude that the C-band be left alone. The C-band functions well and efficiently under its current licensing and allocation structure. Under no circumstances should the Commission permit point-to-multipoint (P2MP) services, as proposed by the Broadband Access Coalition. However, if the Commission decides to permit terrestrial mobile service, it should limit the amount of spectrum to be repurposed to 100 MHz, as originally proposed by the now renamed C-Band Alliance (the "Alliance"), with the protections to the users of the C-band proposed in PSSI Global's Comments, including representation of existing users in the Transition Administrator and strict requirements for reimbursement and compensation of C-band users for their economic losses.

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[25] *Id.*

[26] NAB Comments, p. 11.

[27] Comcast Comments, p. 30, citing Letter from Donald K. Stockdale, Jr., Chief, Wireless Telecommunications Bureau, to Jeffrey H. Blum, Senior Vice President & Deputy General Counsel, DISH Network LLC, at 1 (July 9, 2018).

[28] NAB Comments, p. 11.

Existing Users Must Be Guaranteed Protections and Compensation if the Commission Introduces Terrestrial Mobile and/or P2MP Service in the C-band

17. In recent years, companies involved in aggregation and distribution of programming via satellite like PSSI Global have invested considerable money in improving their transmission and reception capabilities. PSSI Global noted have equipment orders currently being processed for additional C-band amplifiers and antennae that have already been placed to meet customer demand.[29]

18. As the American Cable Association has noted, these investments go "beyond the immediate expenses of filtering, updating equipment, and relocating facilitates" for C-band users. "Reallocation [of the C-band] entails many other costs for video distributors, including a likely increase in backhaul prices as backhaul capacity becomes scarcer, new entry is precluded, and coordination is easier; and the likely harm to rural distributors' ability to compete, as they will be unable to keep up with the number and resolution quality of the video programming available online."[30]

19. The Commission has proposed an ambitious series of changes to the C-band. As it considers these changes, it must consider the significant impact that they will have on existing users of the band, not to mention the impact that they will have on the high quality of programming that they provide to the American viewing and listening consumers. The Alliance's proposal will effectively mean reducing the number of available transponders from 40 to 20. Inevitably, preference will be given to permanent users over "occasional use participants" in the C-band. To put it into perspective, on the last weekend in November 2019 before Thanksgiving, there will be a full range of NCAA college football games on that Saturday, including games with impact on the National Championship, the last NASCAR event of

[29] PSSI Global Comments, p. 14.

[30] ACA Comments, p. 18.

the race season in Miami, and a full schedule of NFL games on Sunday. Will there be enough spectrum capacity to permit an occasional use operator like PSSI Global to meet its commitments to its clients, given the technology constraints outlined in our Comments and noted by many other parties, if the number of transponders is cut in half?

20. If changes are ultimately adopted that will result in repurposing of spectrum, the Commission must ensure that there are adequate funds available to compensate users for more than simply the cost of equipment, and that those funds are made available within a reasonable time, i.e., no later than 90 days after the date of the issuance of the initial license of the terrestrial mobile operators or the date that PSSI Global must cease operating in portions of the C-band, whichever occurs first.

Respectfully submitted,

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